Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18 (cancelled)

Claim 19 (original): An optical switch system comprising
an array of input optical fibers;
an array of first output optical fibers; and
a switching matrix of cholesteric liquid crystal cell units, each liquid crystal cell unit reflecting or transmitting light selectively responsive to control signals and arranged with respect to said array of input optical fibers and said array of first output optical fibers so that light signals from an input optical fiber may be selectively reflected or transmitted by said liquid crystal cell unit into one of said first output optical fibers.

Claim 20 (original): The optical switch system of claim 19 wherein said array of input optical fibers and said array of first output optical fibers comprise two-dimensional arrays, and said switching matrix of cholesteric liquid crystal cell units comprises a three-dimensional array.

Claim 21 (original): The optical switch system of claim 19 further comprising an array of second output optical fibers, said array of second output optical fibers arranged with respect to said array of input optical fibers, said array of first output optical fibers and said switching matrix of cholesteric liquid crystal cell units so that light signals from an input optical fiber may be selectively transmitted or reflected by an liquid crystal cell unit into one of said second output optical fibers.

Claim 22 (original): The optical switch system of claim 21 wherein said array of input optical fibers, said array of first output optical fibers and said array of second output optical fibers comprise two-dimensional arrays, and said switching matrix of cholesteric liquid crystal cell units comprises a three-dimensional array.

Claim 23 (original): The optical switch system of claim 19 wherein each cholesteric liquid crystal cell unit comprises

a first cholesteric liquid crystal cell arranged to receive incident light from an input optical fiber, said first cholesteric liquid crystal cell selectively reflecting circularly polarized light of one state of said incident light or transmitting said incident light responsive to a control signal; and

a second cholesteric liquid crystal cell arranged with respect to said first cholesteric liquid crystal cell to receive light transmitted by said first cholesteric liquid crystal cell, said second cholesteric liquid crystal cell selected to reflect or transmit light from said first cholesteric liquid crystal cell responsive to said control signal when said first cholesteric liquid crystal cell reflects said circularly polarized light of said one state or transmits said incident light respectively.

Claim 24 (original): The optical switch system of claim 23 further comprising a π-phase waveplate element between said first and second cholesteric liquid crystal cells.

Claim 25 (original): The optical switch system of claim 24 wherein said π-phase waveplate element comprises a third liquid crystal cell.

Claim 26 (original): The optical switch system of claim 24 wherein said π-phase waveplate element comprises a plate of birefringent crystal.

Claim 27 (original): The optical switch system of claim 23 wherein said first cholesteric liquid crystal cell comprises a first cholesteric liquid crystal reflecting circularly polarized light in said one state, and said second cholesteric liquid crystal cell comprises a second cholesteric liquid crystal reflecting circularly polarized light in an opposite state.

Claim 28 (original): The optical switch system of claim 20 wherein said switching matrix of cholesteric liquid crystal cell units comprises a plurality of cholesteric liquid crystal cell unit mounting plates, each cholesteric liquid crystal cell unit mounting plate having at least a one-dimensional array of said cholesteric liquid crystal cell units and arranged at an angle with respect to said array of input optical fibers and said array of first output optical fibers.

Claim 29 (original): The optical switch system of claim 28 wherein at least one of said cholesteric liquid crystal cell mounting plates has a two-dimensional array of said cholesteric liquid crystal cell units.

Claim 30 (original): The optical switch system of claim 29 wherein said switching matrix comprises a plurality of separation plates, each separation plate separating two cholesteric liquid crystal cell unit mounting plates.

Claim 31 (original): The optical switch system of claim 30 wherein said switching matrix comprises said cholesteric liquid crystal cell units arranged in a cube.

Claim 32 (original): The optical switch system of claim 20 wherein each array of input optical fibers and first output optical fibers comprises a plurality of collimating GRIN lenses, each GRIN lens proximate ends of said input optical fibers and first output optical fibers.

Claim 33 (original): The optical switch system of claim 20 wherein each array of input optical fibers and first output optical fibers comprises a plurality of collimating microlenses, each microlens proximate ends of said input optical fibers and first output optical fibers.

Claim 34 (original): The optical switch system of claim 20 wherein each array of input optical fibers and first output optical fibers comprises

a first plate having a surface with a plurality of V-grooves therein; and

a second plate having a surface with a plurality of V-grooves therein, said second plate V-grooves matching said first plate V-grooves;

said first and second plates fixed together so that said V-grooves form channels holding a linear array of optical fibers.

Claim 35 (original): The optical switch system of claim 34 further comprising a plurality of said first and second plates fixed together and arranged in a stack to form a two-dimensional array of optical fibers.

Claim 36 (original): The optical switch system of claim 22 wherein said switching matrix of cholesteric liquid crystal cell units comprises a plurality of cholesteric liquid crystal cell unit mounting plates, each cholesteric liquid crystal cell unit mounting plate having at least a one-dimensional array of said cholesteric liquid crystal cell units and arranged at an angle with respect to said array of input optical fibers, said array of first output optical fibers and said array of second output optical fibers.

Claim 37 (original): The optical switch system of claim 36 wherein at least one of said cholesteric liquid crystal cell mounting plates has a two-dimensional array of said cholesteric liquid crystal cell units.

Claim 38 (original): The optical switch system of claim 37 wherein said switching matrix comprises a plurality of separation plates, each separation plate separating two cholesteric liquid crystal cell unit mounting plates.

Claim 39 (original): The optical switch system of claim 38 wherein said switching matrix comprises said cholesteric liquid crystal cell units arranged in a cube.

Claim 40 (original): The optical switch system of claim 22 wherein each array of input optical fibers, first output optical fibers and second output optical fibers comprises a plurality of collimating GRIN lenses, each GRIN lens proximate ends of said input optical fibers, first output optical fibers and second output optical fibers.

Claim 41 (original): The optical switch system of claim 22 wherein each array of input optical fibers, first output optical fibers and second output optical fibers comprises a plurality of collimating microlenses, each microlens proximate ends of said input optical fibers, first output optical fibers and second output optical fibers.

Claim 42 (original): The optical switch system of claim 22 wherein each array of input optical fibers, first output optical fibers and second output optical fibers comprises

a first plate having a surface with a plurality of V-grooves therein; and

a second plate having a surface with a plurality of V-grooves therein, said second plate V-grooves matching said first plate V-grooves;

said first and second plates fixed together so that said V-grooves form channels holding a linear array of optical fibers.

Claim 43 (original): The optical switch system of claim 42 further comprising a plurality of said first and second plates fixed together and arranged in a stack to form a two-dimensional array of optical fibers.